1. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [-0.9, 1.5]$, $b \in [-37, -29]$, $c \in [0.51, 1.23]$, and $d \in [-36, -26]$

B. $a \in [16.5, 22.4]$, $b \in [-9, -3]$, $c \in [1.24, 2.9]$, and $d \in [-6, 0]$

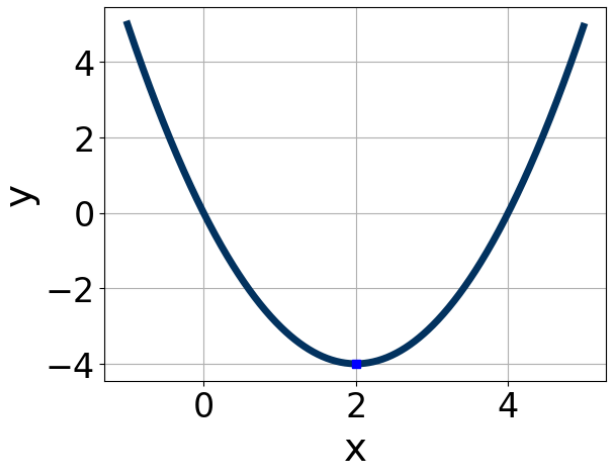
C. $a \in [1.1, 5]$, $b \in [-9, -3]$, $c \in [10.55, 12.05]$, and $d \in [-6, 0]$

D. $a \in [4.2, 11.2]$, $b \in [-9, -3]$, $c \in [5.15, 6.42]$, and $d \in [-6, 0]$

E. None of the above.

---

2. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-2, 0]$, $b \in [4, 5]$, and $c \in [-9, -5]$

B. $a \in [1, 5]$, $b \in [4, 5]$, and $c \in [-1, 6]$

C. $a \in [-2, 0]$, $b \in [-5, -3]$, and $c \in [-9, -5]$

D. $a \in [1, 5]$, $b \in [-5, -3]$, and $c \in [-1, 6]$

E. $a \in [1, 5]$, $b \in [4, 5]$, and $c \in [6, 9]$

---

3. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$81x^2 - 81x + 20$$

A. $a \in [8.8, 12.9]$, $b \in [-8, -1]$, $c \in [7.6, 10.7]$, and $d \in [-5, -1]$

B. $a \in [0.7, 2.9]$, $b \in [-48, -41]$, $c \in [-2.4, 1.9]$, and $d \in [-40, -32]$

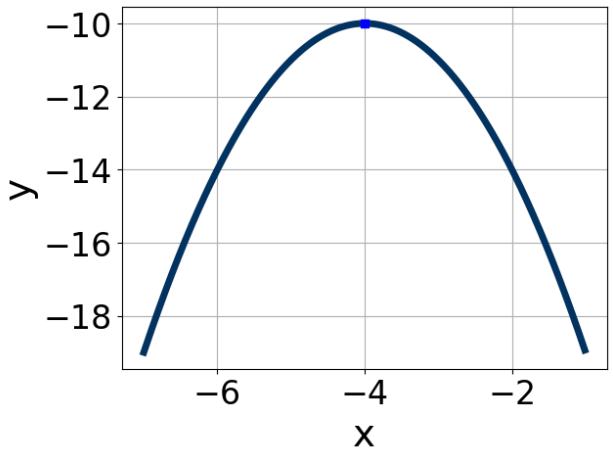
C. $a \in [26, 30.4]$, $b \in [-8, -1]$, $c \in [2, 4.6]$, and $d \in [-5, -1]$

D. $a \in [1.4, 3.8]$, $b \in [-8, -1]$, $c \in [25.5, 27.8]$, and $d \in [-5, -1]$

E. None of the above.

---

4. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-2, 0]$, $b \in [-8, -7]$, and $c \in [-27, -23]$

B. $a \in [-2, 0]$, $b \in [8, 11]$, and $c \in [-6, -4]$

C. $a \in [1, 4]$, $b \in [-8, -7]$, and $c \in [6, 7]$

D. $a \in [1, 4]$, $b \in [8, 11]$, and $c \in [6, 7]$

E. $a \in [-2, 0]$, $b \in [8, 11]$, and $c \in [-27, -23]$

---

5. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-15x^2 - 12x + 8 = 0$$

A. $x_1 \in [-7.8, -4.5]$ and $x_2 \in [17.7, 19.6]$

B. $x_1 \in [-26.2, -24.5]$ and $x_2 \in [23.4, 24.7]$

C. $x_1 \in [-2.3, -0.5]$ and $x_2 \in [0.3, 1]$

D. $x_1 \in [-0.9, 0.4]$ and $x_2 \in [0.6, 1.4]$

E. There are no Real solutions.

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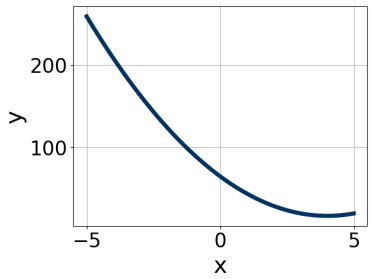
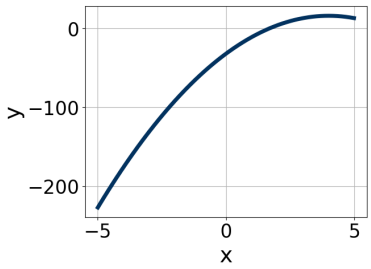
6. Graph the equation below.

$$f(x) = -(x-4)^2 + 16$$

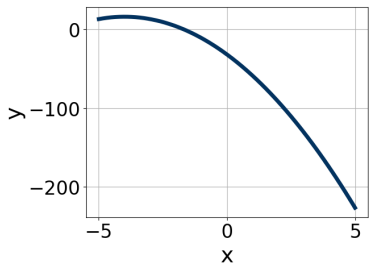
A.



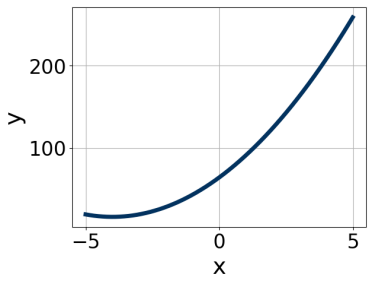
C.



B.



D.



E. None of the above.

---

7. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-11x^2 + 11x + 8 = 0$$

A. $x_1 \in [-0.49, 0.51]$ and $x_2 \in [0.84, 1.56]$

B. $x_1 \in [-24.25, -20.25]$ and $x_2 \in [22.04, 23.11]$

C. $x_1 \in [-18.37, -14.37]$ and $x_2 \in [4.87, 5.5]$

D. $x_1 \in [-5.49, -0.49]$ and $x_2 \in [0.36, 1.22]$

E. There are no Real solutions.

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8. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 60x + 36 = 0$$

A. $x_1 \in [0.12, 0.39]$ and $x_2 \in [5.23, 7.41]$

B. $x_1 \in [0.51, 0.71]$ and $x_2 \in [1.48, 2.88]$

C. $x_1 \in [0.38, 0.53]$ and $x_2 \in [2.79, 5.33]$

D. $x_1 \in [1.08, 1.33]$ and $x_2 \in [0.17, 2.27]$

E. $x_1 \in [29.88, 30.1]$ and $x_2 \in [28.99, 30.05]$

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9. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 - 2x - 24 = 0$$

A. $x_1 \in [-6.73, -5.44]$ and $x_2 \in [0.25, 0.33]$

B. $x_1 \in [-3.72, -3.18]$ and $x_2 \in [0.28, 0.61]$

C. $x_1 \in [-18.11, -17.49]$ and $x_2 \in [20, 20.03]$

D. $x_1 \in [-1.14, -0.44]$ and $x_2 \in [2.49, 2.72]$

E. $x_1 \in [-1.22, -0.84]$ and $x_2 \in [1.32, 1.48]$

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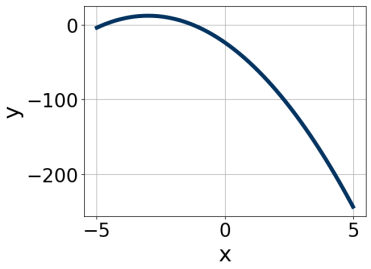
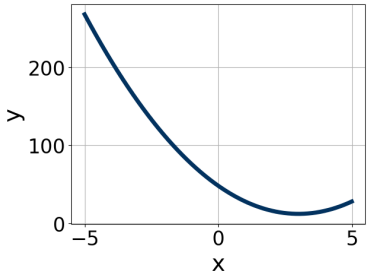
10. Graph the equation below.

$$f(x) = (x - 3)^2 + 12$$

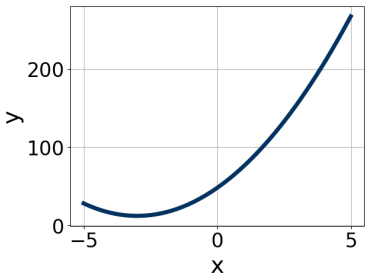
A.



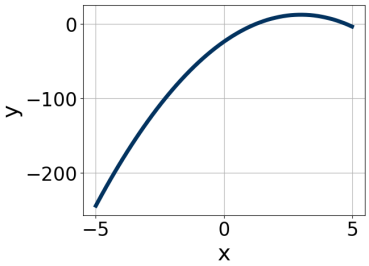
B.



C.



D.



E. None of the above.
